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NASA Procedural Requirements

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COMPLIANCE IS MANDATORY

Requirements for the Conduct of NASA Research and Technology (R&T)

Responsible Office: Science Mission Directorate

Table of Contents

Preface

- P.1 Purpose
- P.2 Applicability
- P.3 Authority
- P.4 Applicable Documents
- P.5 Measurement/Verification
- P.6 Cancellation

Chapter 1. Introduction

- 1.1 Background
- 1.2 Document Structure

Chapter 2. R&T Planning and Prioritization

- 2.1 Acquire Advice
- 2.2 Plan And Set Priorities

Chapter 3. R&T Solicitation And Selection

- 3.1 R&T Solicitation Process
- 3.2 Proposals Received Other Than Through a Solicitation
- 3.3 Peer Review
- 3.4 R&T Selection Process
- 3.5 Partnerships and International Collaboration
- 3.6 Conflicts of Interest and Confidentiality

Chapter 4. R&T Quality Assessment and Performance Measurement Metrics

- 4.1 Overview
- 4.2 Assessment
- 4.3 Performance Measurement

Chapter 5. Quality, Publication and Disseminating Results, and Data Protection

- 5.1 Responsibilities
- 5.2 Quality of R&T Information
- 5.3 Publication and Disseminating Results
- 5.4 Data Protection
- 5.5 Record Retention
- 5.6 Data Availability

Chapter 6. R&T Misconduct

- 6.1 Handling of R&T Misconduct Allegations

Appendix A. Definition of Terms

Appendix B. Acronyms

Appendix C. References for Guidance

Preface

P.1 Purpose

- a. In conjunction with NASA Procedural Requirements (NPR) 7120.8, NASA Research and Technology Program and Project Management Requirements, this document establishes the requirements by which NASA will conduct research and technology (R&T), consistent with the governance model contained in NASA Policy Document (NPD) 1000.0, NASA Strategic Management and Governance Handbook.
- b. While R&T program and project management requirements are established in NPR 7120.8, NASA Research and Technology Program and Project Management Requirements, this document establishes requirements for R&T planning, solicitation and selection of R&T proposals, peer review, quality assessment and performance metrics, data protection and R&T misconduct. The requirements described in this NPR are used to develop Mission Directorate (MD) and Mission Support Office (MSO) R&T management processes. These general principles also apply to the MD, MSO and Functional Offices which fund R&T that is specifically reported as part of the Government Performance and Results Act (GPRA).

P.2 Applicability

- a. This NPR is applicable to NASA Headquarters and NASA Centers, including Component Facilities and Technical and Service Support Centers. This NPR applies to the Jet Propulsion Laboratory (JPL), other contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants, or agreements. Certain cooperative or partnership arrangements involving cost sharing with the private sector may be excluded from the scope of this NPR when approved by the appropriate Mission Directorate Associate Administrator (MDAA) or Mission Support Office Director (MSOD).
- b. This NPR applies to all current and future R&T managed or funded by NASA .
- c. R&T involving human subjects should be conducted in conformance with this NPR except in the areas of release and maintenance of resulting data (see NPD 7100.8, Protection of Human Research Subjects and NPR 7100.1, Protection of Human Research Subjects).
- d. Any conflict between NPR 7120.8, NASA Research and Technology Program and Project Management Requirements and this NPR shall be jointly resolved by the Science Mission Directorate (SMD) and the Office of Chief Engineer (OCE).

P.3 Authority

- a. 42 U.S.C. 2473(c)(1), Section 203(c) (1) of the National Aeronautics and Space Act of 1958, as amended.
- b. NPD 1080.1, NASA Research and Technology Policy

P.4 Applicable Documents

- a. NPD 1000.0, Strategic Management and Governance Handbook
- b. NPD 1000.3, The NASA Organization
- c. NPD 1001.0, NASA Strategic Plan
- d. NPD 1080.1, Policy for the Conduct of NASA Research and Technology (R&T)
- e. NPD 1150.11, Federal Advisory Committee Act (FACA) Committees
- f. NPD 1200.1, NASA Internal Control and Accountability
- g. NPD 1360.2, Initiation and Development of International Cooperation in Space and Aeronautics Programs.
- h. NPD 1440.6, NASA Records Management
- i. NPR 1441.1, NASA Records Retention Schedules
- j. NPD 1600.2, NASA Security Policy.
- k. NPR 1600.1, NASA Security Program Procedural Requirements.
- l. NPD 2200.1, Management of NASA Scientific and Technical Information
- m. NPR 2200.2, Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information
- n. NPR 2810.1, Security of Information Technology
- o. NPR 5100.4, Federal Acquisition Regulation Supplement (NASA/FAR Supplement) [48 CFR 1800-1899]
- p. NPR 5101.33, Procurement Advocacy Programs
- q. NPR 5800.1, Grant and Cooperative Agreement Handbook
- r. NPR 7100.1, Protection of Human Research Subjects
- s. NPD 7100.8, Protection of Human Research Subjects
- t. NPR 7120.5, NASA Space Flight Program and Project Management Requirements
- u. NPR 7120.8, NASA Research and Technology Program and Project Management Requirements
- v. NPR 7500.1, NASA Technology Commercialization Process
- w. NPD 8910.1, Care and Use of Animals
- x. NPR 8910.1, Care and Use of Animals
- y. 48 CFR, Federal Acquisition Regulations
- z. 14 CFR, Aeronautics and Space, Part 1275 Research Misconduct
- aa. Title 41 USC 423, Procurement Integrity

P.5 Measurement/Verification

- a. Compliance with this document is verified through oversight by the governing Program

Management Council (PMC) and NASA internal controls described in NPD 1200.1, NASA Internal Control and Accountability. The cognizant MD or MSO shall periodically review and make recommendations to the governing PMC on the metrics that are used for inclusion in the Agency's budgetary, performance planning, and review documents and for other evaluative purposes.

P.6 Cancellation

a. NPR 1080.1, NASA Science Management.

/S/

Dr. S. Alan Stern

Associate Administrator for the Science Mission Directorate

Chapter 1. Introduction

1.1 Background

1.1.1 In conjunction with NPR 7120.8, NASA Research and Technology Program and Project Management Requirements, this document establishes the requirements by which NASA will conduct research and technology (R&T), consistent with the governance model contained in NPD 1000.0, NASA Strategic Management and Governance Handbook. While R&T program and project management requirements are established in NPR 7120.8, NASA Research and Technology Program and Project Management Requirements, this document establishes requirements for R&T planning, solicitation and selection of R&T proposals, quality assessment and performance metrics, data protection and R&T misconduct.

1.1.2 The requirements specified in this document ensure that NASA R&T is scientifically and technologically well founded, of excellent quality, appropriate for intended applications, and that the benefits of NASA R&T to the public are captured, validated, and communicated.

1.2 Document Structure

1.2.1 This document is organized as follows: Chapter 2 defines the requirements for R&T planning; Chapter 3 provides requirements for solicitation and selection of R&T proposals including peer review; Chapter 4 provides requirements for quality assessment and performance metrics for R&T; Chapter 5 defines R&T data protection requirements; and Chapter 6 describes the requirements for handling R&T misconduct.

1.2.2 The Appendices contain Definition of Terms, Acronyms and References for Guidance.

1.2.3 In this document, a requirement is identified by "shall", a good practice by "should", permission by "may" or "can", expectation by "will", and descriptive material by "is" or "are."

Chapter 2. R&T Planning and Prioritization

2.1 Acquire Advice

2.1.1 NASA R&T Programs are initiated with the advice of the R&T community (internal and external to NASA) in the form of studies or Advisory Committee recommendations. These inputs are used by the MDAA or MSOD, with assistance from the Program Scientist (if assigned) and R&T Program Lead, to develop priorities and documentation in accordance with NPR 7120.8, NASA Research and Technology Program and Project Management Requirements.

2.1.2 NASA uses a broad variety of mechanisms to obtain external input, including, for example, advisory committees comprised of outside experts, contracted external studies, and NASA managed internal studies. Advice may be obtained from NASA-formed advisory committees. Studies may also be requested from for-profit concerns, professional societies, the National Research Council, or other qualified organizations, depending on the specific need.

2.1.3 NASA-formed advisory committees shall be established and managed in accordance with NPD 1150.11, Federal Advisory Committee Act (FACA) Committees.

2.1.4 In obtaining advice on a given topic or area, NASA seeks to maximize expertise and objectivity; this will often require balancing the independence of advising individuals or organization(s) who receive NASA funding against the need for familiarity with NASA programs and issues. NASA shall avoid conflicts of interest, including financial conflict of interest, and the potential for bias when selecting members of advisory groups.

2.2 Plan and Set Priorities

2.2.1 Strategic Acquisition Planning for R&T investments is accomplished as described in NPR 7120.8, NASA Research and Technology Program and Project Management Requirements.

2.2.2 The setting of priorities requires the balancing of many factors: NASA strategic goals, intrinsic merit, technical feasibility, resources availability, safety, likelihood of mission success, potential environmental impact, and national policy. While achieving R&T objectives is a priority, there will always be a risk of failure when NASA is challenging its researchers to push the state of the art. A good R&T program does not necessarily compromise on advancing the state of the art to ensure that every research goal is achievable.

2.2.3 R&T priorities are based on strategies and implementation plans derived from advice received, MDAA or MSOD investment criteria of relevance, quality, cost and performance, and other considerations and are aligned with the Agency's vision and mission, as defined by NPD 1001.0, NASA Strategic Plan. Programmatic or societal considerations can enter the planning and priority-setting process at several stages. Contributions to broad national needs identified by the Administration or Congress will also play a role in establishing R&T priorities and in arriving at the decision to proceed with a particular investment.

2.2.4 The processes used to set priorities and the rationale and conclusions of priority setting should be clearly and publicly promulgated in the interest of fostering stakeholder input and credibility among non-participants.

Chapter 3. R&T Solicitation and Selection

3.1 R&T Solicitation Process

3.1.1 Open competition and peer review (the technical review of proposals by qualified unbiased personnel) shall be the standard method of ensuring that the most qualified R&T proposals are selected.

3.1.2 Solicitation Mechanisms

3.1.2.1 NASA solicits proposals for R&T investigations using Broad Agency Announcements (BAAs) such as an Announcement of Opportunity (AO) or NASA Research Announcement (NRA). A NASA Cooperative Agreement Notice (CAN) is also used for activities in which a substantial involvement is expected between NASA and the recipient during the performance of the proposed activity. BAAs, NRAs, AOs, and CANs are also referred to as "research solicitations".

3.1.2.2 Specific guidance on the use of these solicitation mechanisms is found in:

a. AOs are described in NPR 5100.4, Federal Acquisition Regulation Supplement (NASA/FAR Supplement) [48 CFR 1800-1899] Part 1872, Acquisition of Investigations.

b. NRAs are described in NPR 5100.4, Federal Acquisition Regulation Supplement (NASA/FAR Supplement) [48 CFR 1800-1899] Part 1835, Research and Development Contracting.

c. CANs are described in NPR 5800.1, Grant and Cooperative Agreement Handbook (14 CFR 1260).

3.1.3 Proposal Evaluation

3.1.3.1 As a general rule, the principal elements considered in evaluating a proposal are relevance to NASA's objectives, intrinsic merit, and cost.

3.1.3.2 Evaluation of a proposal's relevance to NASA's objectives shall include the consideration of the potential contribution of the effort to NASA's vision and mission, as defined by NPD 1001.0, NASA Strategic Plan.

3.1.3.3 Evaluation of intrinsic merit of proposals shall include consideration of the following factors:

a. Overall scientific or technical merit of the proposal and/or unique and innovative methods, approaches, concepts, or advanced technologies demonstrated by the proposal;

b. Offeror's capabilities, related experience, facilities, techniques, or unique combination of these which are integral factors for achieving the proposal's objectives;

c. The qualifications, capabilities, and experience of the proposed principal investigator, team leader, or key personnel critical in achieving the proposal objectives;

d. Evaluation against the state-of-the-art.

3.1.3.4 Evaluation of the cost of a proposed effort shall include the realism and reasonableness of the proposed cost and availability of funds.

3.1.3.5 Proposals submitted to NASA shall be reviewed by panel reviewers, individual reviewers, or a combination of both as described below:

- a. The responsible R&T Program Lead (or Program Scientist or other designee, if assigned) selects the panel and, if used, individual reviewers based on their known expertise relevant to the content of each proposal. These panel reviewers or individual reviewers shall be the proposer's professional peers who do not have a conflict of interest or potential bias (See Section 4.3).
- b. There shall be at least two readers of each proposal.
- c. In all cases copies of every proposal shall be available for inspection by the non-conflicted members of the panel while it is in session.
- d. The final consensus evaluation determined by the panel shall be reviewed and approved for completeness and clarity by the chairperson of the panel and the cognizant NASA Program Officer.

3.2 Proposals Received Other than Through a Solicitation

3.2.1 Unsolicited Proposals

3.2.1.1 Unsolicited proposals are those submitted to NASA on the initiative of the applicant rather than in response to a BAA or CAN. NASA Guidance for the Preparation and Submission of Unsolicited Proposals shall be used by the proposer to develop and submit an unsolicited proposal. The information NASA personnel may provide in discussing the development of an unsolicited proposal is described in 48 CFR, Federal Acquisition Regulation, Subpart 15.6, Unsolicited Proposals. However, the decision to submit an unsolicited proposal rests solely with the proposer.

3.2.1.2 The procedures for receiving and reviewing unsolicited proposals are contained in 48 CFR, Federal Acquisition Regulation, Subpart 15.6, Unsolicited Proposals, NPR 5100.4, Federal Acquisition Regulation Supplement (NASA/FAR Supplement) [48 CFR 1800-1899], Subpart 1815.6, Unsolicited Proposals, NPR 5800.1, Grant and Cooperative Agreement Handbook (14 CFR 1260), and the NASA Guidance for the Preparation and Submission of Unsolicited Proposals.

3.2.1.3 If an unsolicited proposal is determined to be compliant with FAR, NASA shall conduct an appropriate peer review after which the proposal is submitted to an appropriate NASA Selection Official for selection or rejection. Waivers from the peer review process may be granted for proposals that meet the criteria stated in Section 3.3.4.

3.2.1.4 Unsolicited proposals from foreign sources are subject to policy established in NPD 1360.2, Initiation and Development of International Cooperation in Space and Aeronautics Programs.

3.2.2 Solicited Noncompetitive Proposals

3.2.2.1 There are circumstances under which NASA may solicit a sole source R&T proposal. A proposal of this type is a solicited noncompetitive proposal. Examples include:

- a. When a NASA Principal Investigator successfully competes for research funding but has not identified all or part of his or her research group, the award creates a program or project requirement to solicit proposals for prospective participants.
- b. When no proposals for a required activity are received by NASA in response to a solicitation, the program or project may solicit a proposal from a known source to meet the program or project requirement.

c. When the MDAA determines that one or more activities can best be performed by a known, existing capability.

3.2.2.2 Solicited noncompetitive proposals should be subjected to appropriate peer review after which the proposal is submitted to an appropriate NASA Selection Official for selection or rejection. Waivers from the peer review process may be granted for proposals that meet the criteria stated in Section 3.3.4.

3.2.2.3 A written justification for award of a noncompetitive proposal shall be included in the proposal's award file.

3.2.3 Congressionally Directed Funding

3.2.3.1 Congressionally directed funding for R&T programs and policies is often divided between assistance to non-Federal entities (site-specific) and increases to specific NASA programs (programmatic). Proposals submitted in response to Congressionally directed site-specific funding are normally evaluated using criteria based upon those included in the NASA Guidance for Preparation and Submission of Unsolicited Proposals but are not necessarily peer reviewed. Technical evaluations to assure the validity of the evaluation and the independent quality inherent in merit review may be carried out by a qualified person who is not serving as the cognizant NASA Program Officer. The independent technical evaluation, if done in this manner, should not require the independent technical evaluator to make a recommendation for funding. If an impasse occurs after a good faith effort to resolve outstanding issues has been made, the cognizant MDAA shall inform the Associate Administrator (AA) and Office of Legislative and Intergovernmental Affairs.

3.3 Peer Review

3.3.1 Peer review is a process in which a group of technically knowledgeable people with reputations for integrity and relevant expertise is convened to provide, to the maximum extent possible, unbiased evaluations of the merit and technical validity of proposed work. Specific goals of peer review are to:

- a. Determine the quality, relevance, and value of the work being proposed.
- b. Identify the work most likely to succeed, or work that might be high risk but would result in high reward.
- c. Assess the relative merits of the proposed work to the state-of-the-art in both current knowledge and similar work being conducted by other groups.
- d. Determine the scientific and technical merits of each proposal, consistent with the evaluation factors stated in the solicitation.
- e. Demonstrate to internal and external communities that excellence and fairness are achieved in arriving at scientific and technical decisions by making the R&T communities themselves participants in the selection process.

3.3.2 To accomplish the goals of peer review, NASA shall ensure that:

- a. Reviewers are knowledgeable and collectively cover the full range of scientific and technical expertise required for thorough proposal evaluation.
- b. Conflicts of interest are scrupulously avoided. Screening for conflicts of interest shall be a mandatory precondition for participation in NASA peer review activities.

- c. NASA programmatic and technical needs and requirements are understood, as described in the R&T solicitation.
- d. The criteria for evaluation are well defined and understood and are accepted by the reviewers, traceable to the needs and requirements outlined in the R&T solicitation, and objectively stated in that solicitation.
- e. The responsible R&T Program Officer or another NASA civil servant monitors the peer reviewers.

3.3.3 To maintain equity in competitions in which personnel of a Center or JPL may be participants, selection of investigations and investigator teams is always a function of the MD or MSO when a competition is open to both internal and external proposals.

3.3.4 A waiver may be granted by the responsible MDAA or MSOD from the peer review process, but not merit review, if the waiver request meets any of the following criteria:

- a. Proposals to provide unique infrastructure facilities or capabilities necessary for the conduct of R&T programs and for which the requisite experience and technical background to provide competent peer review are not available.
- b. Small grants of less than \$40,000 for activities such as scientific meetings and publications by recognized scientific organizations.
- c. Congressionally directed funding (see section 3.2.3).

3.3.5 Waivers of peer review as described in section 3.3.4 for proposals costing \$100,000 or more shall be reported to the SMD Chief Scientist for transparency.

3.4 R&T Selection Process

3.4.1 After solicitation and peer review of proposals, the NASA Program Officer recommends to the Selection Official identified in the solicitation the suite of proposals that should be selected for funding. These recommendations are based on the results of science or technical peer review, any program-unique criteria (such as program balance) stated in the solicitation, its relevance to the R&T objectives stated in the solicitation and to NASA's strategic goals in general, its comparison to competing proposals of equal merits and objectives, and the available budget resources. The Selection Official makes the selection. In some cases NASA may elect to offer selection of only a portion of a proposed investigation. Partial selection is discussed in more detail in Section 3.4.4.

3.4.2 Selection Pre-requisites

3.4.2.1 Care and Use of Animals. R&T involving the use of animals shall comply with the policy established in NPD 8910.1, Care and Use of Animals and NPR 8910.1, Care and Use of Animals..

3.4.2.2 Use of Human Research Subjects. R&T involving human subjects shall comply with the policy established in NPD 7100.8, Protection of Human Research Subjects and NPR 7100.1, Protection of Human Research Subjects.

3.4.2.3 For AOs, the proposals are categorized. As required by NPR 5100.4, Federal Acquisition Regulation Supplement (NASA/FAR Supplement) [48 CFR 1800-1899], Part 1872, Acquisitions of Investigations, the proposals are also reviewed by an AO Steering Committee prior to submission of the recommendation for selection.

3.4.3 Selection Activities

- a. The NASA Selection Official shall prepare Selection Statements as required by NPR 5100.4, Federal Acquisition Regulation Supplement (NASA/FAR Supplement) [48 CFR 1800-1899].
- b. After selection, each proposer is notified by letter or electronic mail of the disposition of the proposal. Unless otherwise specified in the solicitation, each proposer should be offered a debriefing based on identified strengths and weaknesses.
- c. The responsible R&T Program Officer forwards official notification of selection and required documentation to the appropriate NASA Procurement Office, which contacts the proposing institution to negotiate funding and all required terms and conditions through an appropriate award instrument. For awards resulting in grants, the Technical Officer (often the Program Lead or Program Scientist) will negotiate funding levels and revised statement of work for partial selections.
- d. Participation of foreign investigators shall be in accordance with NPR 5100.4, Federal Acquisition Regulation Supplement (NASA/FAR Supplement) [48 CFR 1800-1899], Part 1835, Research and Development Contracting.

3.4.4 NASA may elect to select only a portion of a proposed investigation, usually at a level of support reduced from that requested in the original proposal. In such a case, the proposer shall be given the opportunity to accept or decline selection based on the reduced effort and/or budget. If the proposer accepts such an offer, a revised budget and statement of work may be required before funding action on the proposal is initiated. If the proposer declines the offer of a partial selection, NASA may withdraw the offer of selection in its entirety.

3.4.5 Disclosure of Selections and Non-Selections

3.4.5.1 For selected proposals, NASA will require the Principal Investigator to agree to the publication of the Proposal Title, the Principal Investigator's name and institution, co-investigators' names and institutions (if applicable), and the Proposal Summary. NASA shall include this condition in the solicitation and in the award instrument. After the instrument is executed, NASA shall post that information on an appropriate publicly accessible location. Selected proposers may release additional information about their proposals, subject to the requirements of NPD 2200.1, Management of NASA Scientific and Technical Information, and NPR 2200.2, Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information, if the proposer is from NASA, the STI is produced by NASA, or a NASA channel will be used for information release.

3.4.5.2 However, NASA considers other portions of proposals to be proprietary and will treat this information as confidential to the extent permitted by law. NASA shall not release these sections of successful proposals to the public without consultation with the proposer.

3.4.6 Debriefing of Proposers

3.4.6.1 A proposer should be informed of the major factor(s) that led to the acceptance or rejection of the proposal unless the competitive solicitation explicitly states otherwise. At the discretion of the NASA Program Officer, such debriefings may be oral, written, or both. A proposer may request a face-to-face debriefing at NASA Headquarters or at an appropriate NASA Center. Debriefing of proposers shall be in accordance with NPR 5100.4, Federal Acquisition Regulation Supplement (NASA/FAR Supplement) [48 CFR 1800-1899].

3.4.6.2 NASA funds shall not be used to defray debriefing travel costs except for NASA civil servants in the performance of their official duties.

3.4.6.3 NASA shall make non-selected proposers aware that proposals of nominally high intrinsic and programmatic merits may be declined for programmatic reasons that may be unrelated to any scientific or technical qualities of the proposal.

3.4.7. The non-selection of a proposal does not restrict the submission of a similar or even the same effort by the proposer(s) in response to appropriate future NASA solicitations or to other appropriate funding agencies or organizations. However, if submission of the same or nearly the same proposal to NASA in the future is contemplated, proposers should be strongly urged to carefully consider the totality of the comments offered during their debriefing, as well as the proposal guidelines, before making their decision. Merely correcting any perceived deficiencies in a proposal as noted by a review process for one BAA in no way guarantees a higher rating in another solicitation.

3.4.8 Proposers may use the NASA Ombudsman process, file protests and process contract disputes and appeals in accordance with the policy and procedures established in NPR 5100.4, Federal Acquisition Regulation Supplement (NASA/FAR Supplement) [48 CFR 1800-1899], Part 1833, Protests, Disputes, and Appeals and NPR 5101.33, Procurement Advocacy Programs.

3.5 Partnerships and International Collaboration

3.5.1 In accordance with NPD 1080.1, Policy for the Conduct of NASA Research and Technology (R&T), NASA's policy is to encourage the participation of industry, academia, other non-profit organizations, and other Government agencies in NASA R&T.

3.5.2 The Office of External Relations in conjunction with the relevant MD or MSO shall negotiate all international collaborations. All international negotiations follow NPD 1360.2, Initiation and Development of International Cooperation in Space and Aeronautics Programs.

3.5.2.1 For international collaborations involving NASA, each partner shall assume full financial responsibility for its own commitments, pursuant to NPD 1360.2, Initiation and Development of International Cooperation in Space and Aeronautics Programs.

3.5.2.2 Any foreign contract acquisition valued above \$100,000 or involving export control issues shall be coordinated with the Office of External Relations, in accordance with NPR 5100.4, Federal Acquisition Regulation Supplement (NASA/FAR Supplement) [48 CFR 1800-1899], SubPart 1825.7002, Foreign Contracts.

3.5.2.3 International agreements that contemplate the procurement of goods or services using U.S. appropriated funds, unless done solely on a cooperative basis, shall require Office of Procurement concurrence, in accordance with NPR 5100.4, Federal Acquisition Regulation Supplement (NASA/FAR Supplement) [48 CFR 1800-1899], SubPart 1825.7003, International Agreements.

3.6 Conflicts of Interest and Confidentiality

3.6.1 The issues of conflict of interest and confidentiality are of critical importance to the peer review process. Regardless of whether the review process is conducted by individual reviewers or by a convened panel, the presiding NASA Program Officer shall address and resolve conflicts of interest based on the following requirements:

a. Every reviewer shall agree to avoid conflicts of interest and to maintain the confidentiality of his/her participation in and the results of the review process.

- b. U.S. Government employees who serve as reviewers are governed by Title 41 USC 423, Procurement Integrity. Non-federal reviewers shall sign a Nondisclosure Agreement in advance of being sent any proposals. By accepting a Nondisclosure Agreement, a non-Federal reviewer agrees to abide by its requirements for conflicts of interest and confidentiality.
- c. Should an unanticipated conflict arise or otherwise become known during the course of examining the proposal under review, the reviewer shall inform the cognizant NASA Program Officer and cease participation pending a NASA decision on the issue.
- d. NASA shall not condone disclosure by a reviewer of either the proposals themselves or their evaluation materials and discussions under any circumstances at any time even after the selections are announced. Since the review process is not complete until the selections are announced, a breach of confidentiality of the review process could result in the entire selection process for an NRA being declared invalid. Just as serious, unauthorized disclosure of privileged review information may lead to the proposer and/or his/her proposing colleagues to make critical career decisions based on erroneous, preselection hearsay information.
- e. In certain situations, the individuals selected to participate as reviewers may have been identified in a competing proposal or have otherwise been identified as having a conflict of interest. In such situations, NASA shall take appropriate measures to assure the objectivity and integrity of the evaluation process, including, for example, excusing the individual from panel discussions of proposals for which a conflict exists. In some cases, the individual may also be excused from the discussion of proposals other than those giving rise to the conflict of interest if these proposals are in direct programmatic competition with those proposals giving rise to the conflict.
- f. The Office of General Counsel is responsible for assisting with the resolution of conflicts of interest.

Chapter 4. R&T Quality Assessment and Performance Measurement Metrics

4.1 Overview

4.1.1 The cognizant MDAA or MSOD is responsible for conducting quality and performance assessments of each R&T program, using the reviews required by NPR 7120.8, NASA Research and Technology Program and Project Management Requirements. Additional mechanisms as described in this Chapter are also used by NASA to assess the quality and performance of R&T investments.

4.2 Assessment

4.2.1 Program Leads of R&T programs shall demonstrate the extent to which their programs meet the following criteria:

- a. Relevance - R&T programs shall be able to articulate why this investment is important, relevant, and appropriate and have well-conceived plans that identify program goals, priorities and linkages to national and stakeholder/beneficiary needs.
- b. Quality - R&T programs shall justify how funds will be allocated to ensure quality R&T.
- c. Performance - R&T programs shall establish plans and management processes to monitor and document performance, including appropriate outcome measures and milestones that can be used to track progress toward goals, and assess whether funding is to be enhanced or redirected.

4.2.2 NASA demonstrates compliance with these criteria in the Integrated Budget and Performance Document (IBPD) utilizing the results from status reviews and independent assessments required by NPR 7120.8, NASA Research and Technology Program and Project Management Requirements. NASA internal reviews of R&T programs include annual program and project level assessments at NASA Centers, contractor sites, and NASA Headquarters. For external review of R&T programs, NASA relies on peer review panels of R&T experts from outside NASA to conduct quality and performance assessments.

4.3 Performance Measurement

4.3.1 Governmentwide mandates, such as the Government Performance and Results Act (GPRA) and the Program Assessment and Rating Tool (PART), are also used to measure the performance of NASA R&T programs. Each MD or MSO that solicits, selects, funds, and conducts R&T is responsible for maintaining statistics on this process for their respective R&T programs. These statistics are reported annually as part of GPRA reporting (Section 4.3.2) and the Performance Assessment and Rating Tool (Section 4.3.3). Because the outcome of R&T may be difficult to evaluate on a short-term basis, a retrospective assessment covering the previous 3 to 5 years may be used to provide a more complete and accurate indicator with respect to the quality, relevance, and performance of the R&T investment. Evaluating the inputs provided, the outcomes achieved, and the value of those outcomes to the R&T community determines performance measurements for R&T investments.

4.3.2 The GPRA requires the following activities: an Agency-level strategic plan that sets goals and objectives, an annual performance plan that translates goal into annual targets, and an annual performance report that demonstrates whether targets are met. Each MD or MSO submits a report on annual performance goals, based on its strategic plans, for internal NASA review by Program Analysis and Evaluation (PA&E) and the Office of Management and Budget (OMB) before it is sent to Congress as mandated by GPRA.

4.3.3 The PART is a systematic method of assessing the performance of program activities across the Federal Government. OMB uses PART assessments to help link performance to budget decisions and to provide a basis for making recommendations to improve program results. NASA applies the PART to individual R&T Programs and OMB assesses each Program fully once every three years. Results of PART assessments, including OMB recommendations for improvement, are published each year with the President's budget request.

Chapter 5. Quality, Publication and Disseminating Results, and Data Protection

5.1 Responsibilities

5.1.1 NASA and NASA sponsored investigators are responsible for the quality of the R&T information submitted for publication or presented at technical meetings.

5.1.2 When scientific and technical information (STI) is released by NASA, NPR 2200.2, Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information shall be followed for obtaining approval for dissemination of the information.

5.2 Quality of R&T Information

5.2.1 The OMB defines "quality" of R&T information as the encompassing term, of which "utility," "objectivity" and "integrity" are the constituents. "Utility" refers to the usefulness of the information to the intended users. "Objectivity" focuses on whether the disseminated information is being presented in an accurate, clear, complete and unbiased manner, and as a matter of substance, is accurate, reliable and unbiased. "Integrity" refers to security -- the protection of information from unauthorized access or revision to ensure that the information is not compromised through corruption or falsification.

5.2.2 NASA conforms to these requirements by using program/project reviews as discussed in NPR 7120.8, NASA Research and Technology Program and Project Management Requirements to ensure utility and objectivity. External peer review as described in Paragraph 4.2.2 of the present document is also utilized by NASA to measure utility and objectivity of R&T programs. Integrity is maintained through compliance with the requirements established in Section 5.4..

5.3 Publication and Disseminating Results

5.3.1 NASA and NASA-sponsored investigators shall publish or disseminate the results of NASA R&T activities using mechanisms that include the NASA Scientific and Technical Information (STI) Report Series, NASA websites, and non-NASA scientific and technical channels such as professional society journals, conference presentations, or conference proceedings. NASA policy and requirements for STI are described in the NPD 2200.1, Management of NASA Scientific and Technical Information and NPR 2200.2, Requirements for Documentation, Approval and Dissemination of NASA Scientific and Technical Information.

5.3.2 In order to ensure that high quality standards are maintained, NASA investigators and NASA-sponsored investigators should publish research results in the peer-reviewed literature to the greatest practical extent. Peer review of results, methodologies, and techniques helps ensure technical excellence of research conducted or supported by NASA.

5.3.3 Technical publications and reports resulting from grants and cooperative agreements shall be provided as required by Code of Federal Regulations 14 CFR, Part 1260, Grants and Cooperative Agreements.

5.3.4 NASA and NASA-sponsored investigators should also support education and public outreach, collaborate with the NASA's Public Affairs Office in preparing press releases and related materials, and engage in community service activities such as serving on peer review panels and advisory bodies.

5.4 Data Protection

5.4.1 Protection of R&T data and documents shall be in accordance with the following:

- a. NPD 1440.6, NASA Records Management (regarding proper archiving and disposal of Federal records).
- b. NPD 1600.2, NASA Security Policy.
- c. NPR 1600.1, NASA Security Program Procedural Requirements.
- d. NPR 2810.1, Security of Information Technology (regarding the integrity of data and protection from authorized access or change).
- e. NPR 7500.1, NASA Technology Commercialization Process (regarding data rights).
- f. NPD 2200.1, Management of NASA Scientific and Technical Information.
- g. NPR 2200.2, Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information (regarding special handling for data with export control and other restrictions).

5.5 Record Retention

5.5.1 All documentary information, regardless of format, made or received in the course of conducting NASA R&T programs are Federal records and shall be maintained, safeguarded, and dispositioned in accordance with the requirements of NPR 1441.1, NASA Records Retention Schedules.

5.6 Data Availability

5.6.1 The results of NASA R&T efforts shall be provided the widest practicable and appropriate dissemination, while precluding the inappropriate dissemination of sensitive but unclassified information.

5.6.2 Per NPD 2200.1, NASA and NASA-funded investigators shall disseminate STI in a manner consistent with U.S. laws and regulations, Federal information policy, intellectual property rights, technology transfer protection requirements, and budgetary and technological limitations.

5.6.3 NASA shall place no requirements on publication or dissemination solely by contractors or grantees of the results of R&T conducted under a NASA contract or grant. Contractors and grantees have the right to publish or disseminate STI first produced by the contractor or grantee in the performance of a contract or grant, except to the extent such STI may be subject to Federal export control or national security laws or regulations, or unless otherwise provided in the contract or grant.

5.6.4 To the extent a contractor or grantee receives or is given access to STI necessary for the performance of a contract or grant which contains restrictive markings, the STI shall be treated in accordance with the markings. Such restrictive markings identify specific STI which can be used only for specific purposes and which must not be disclosed or disseminated.

Chapter 6. R&T Misconduct

6.1 Handling of R&T Misconduct Allegations

6.1.1 R&T misconduct means fabrication, falsification or plagiarism in proposing, performing or reviewing R&T, or in reporting R&T results. R&T misconduct does not include honest error or differences of opinion. For R&T that is sponsored or conducted by NASA, the accomplishing activity is responsible for compliance with NASA's R&T misconduct policy.

6.1.2 NASA shall handle allegations of R&T misconduct following the requirements published by the Office of Science and Technology (65 Federal Register 76260, Dec. 6, 2000). NASA's policies and procedures for handling these investigations are published in the Code of Federal Regulations 14 CFR, Part 1275, Research Misconduct.

6.1.3 NASA individuals who receive allegations of R&T misconduct that may have occurred within or outside NASA shall notify the NASA Inspector General. The NASA Inspector General is responsible for R&T misconduct inquiries and investigations and for the preparation and submission of its findings and recommendations in a report to NASA. The cognizant MDAA or MSOD is responsible for implementing any administrative actions that may result from adjudication of research misconduct..

Appendix A. Definition of Terms

Note: See NPR 7120.8, NASA Research and Technology Program and Project Management Requirements for additional definition of terms used in this document.

Peer review. A process in which a group of technically knowledgeable people with reputations for integrity and relevant expertise is convened to provide, to the maximum extent possible, unbiased evaluations of the merit and technical validity of proposed work.

Principal Investigator (PI). A person who conceives an investigation and is responsible for carrying it out and reporting its results. In some cases, PIs from industry and academia act as managers (Project Managers) for smaller development efforts with NASA personnel providing oversight.

Program Officer. A person who manages the solicitation, evaluation, and selection process for an R&T program or portfolio project. The Program Officer is responsible for assuring the Selecting Official prior to selection that all requirements in this NPR and other applicable regulations have been followed.

R&T Misconduct. Fabrication, falsification, or plagiarism in proposing, performing, or reviewing research or technology, or in reporting research or technology results. R&T misconduct does not include honest error or differences of opinion.

Research and Technology (R&T). Basic research, applied research, and technology development.

Scientific and Technical Information (STI). The results (facts, analyses, and conclusions) of basic and applied scientific, technical, and related engineering research and development. STI also includes management, industrial, and economic information relevant to this research.

Unsolicited proposals. Proposals that are submitted to NASA on the initiative of the applicant rather than in response to a BAA or CAN or other solicitation. Waiver. A documented authorization intentionally releasing a program or project from meeting a requirement.

Appendix B. Acronyms

AA	Associate Administrator
AO	Announcement of Opportunity
BAA	Broad Agency Announcement
CAN	Cooperative Agreement Notice
CFR	Code of Federal Regulations
FACA	Federal Advisory Committee Act
FAR	Federal Acquisition Regulation
GPRA	Government Performance and Results Act
IBPD	Integrated Budget and Performance Document
JPL	Jet Propulsion Laboratory
MD	Mission Directorate
MDAA	Mission Directorate Associate Administrator
MSO	Mission Support Office
MSOD	Mission Support Office Director
NASA	National Aeronautics and Space Administration
NFS	NASA Federal Acquisition Regulation (FAR) Supplement
NPD	NASA Policy Directive
NPR	NASA Procedural Requirements
NRA	NASA Research Announcement
OCE	Office of the Chief Engineer
OMB	Office of Management and Budget
PART	Program Assessment and Rating Tool
PA&E	Program Analysis and Evaluation
PI	Principal Investigator

PMC	Program Management Council
R&T	Research and Technology
SMD	Science Mission Directorate
STI	Scientific and Technical Information
TD	Technology Development

Appendix C. References for Guidance

The documents listed in this appendix are provided as a guide to help determine the requirements imposed from outside this document. Applicable directives not cited in this document should be identified in Center processes and practices.

C.1 NASA Policy Directives

1. NPD 7120.4, Program/Project Management
2. NPD 8700.1, NASA Policy for Safety and Mission Success

C.2 NASA Procedural Requirements

1. NPR 8715.3, NASA General Safety Program Requirements

C.3 Related References

1. Guidance for the Preparation and Submission of Unsolicited Proposals
2. Office of Science and Technology (65 Federal Register 76260, Dec. 6, 2000)